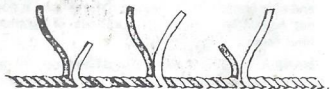


## LONG SPLICE

The Long splice is not quite as strong as the Short splice, but it permits a rope to run freely through a block or pulley.

- 1 To make a Long splice, unlay the end of each rope about 14 turns and bring them together so that the main bodies of the ropes fit snugly and the unlaid strands mesh, alternating a strand of one with a strand of the other. Sealing strand-ends of synthetic fiber ropes with a flame or hot knife will prevent their unravelling.



- 2 Starting with any opposite pair, unlay one strand and replace it with its opposite strand from the other rope. Do the same thing with another pair of strands, going in the opposite direction. You now have two long opposing strands in the center, at the original meeting point of the two ropes, and a pair of long and short opposing strands on each side of center.



- 3 Now tie each pair of opposing strands tightly with an overhand knot, tuck each strand twice back into the rope, going against the twist. Roll the splice under your foot or a board, clip protruding strand-ends and your splice is complete.

## EYE SPLICE

The Eye Splice may be made as a loop of any size, or it can be made tight around a metal thimble to prevent chafing of the rope fibers.



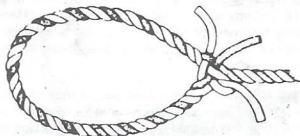
- 1 To begin your Eye Splice unlay the strands for a short distance and double back to form a loop of the desired size, with the unlaid strands laying across the twist of the rope.

Sealing strand-ends of synthetic fiber rope will prevent them from unravelling.

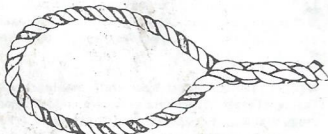
Tuck the center unlaid strand under any one of the strands in the main body of the rope, going against the twist.



- 2 The next unlaid strand goes over the strand under which the center unlaid strand is tucked and is tucked under the next strand in the rope.



- 3 Tuck the last unlaid strand under the remaining strand in the rope, making sure the tuck is against the twist.



- 4 Pull each strand snugly up to the main body of the rope then tuck them, in sequence, over and under the strands in the rope. While it is traditional to use 4 tucks, at least 6 tucks are recommended for synthetic fiber ropes.

Roll the splice under your foot or a board, and trim protruding strand ends, not too closely to rope. Your splice is complete.

8 - Finis

**Everything you've  
wanted to know  
about *SPLICING*  
but were afraid  
to ask.**

FOR ALL TYPES OF ROPE . . .  
DIAMOND BRAID . . . BRAID ON  
BRAID AND TWISTED.

*The first thought in cordage.*



WELLINGTON PURITAN MILLS, INC.  
MADISON, GEORGIA 30650

TURN TO PAGE 1

## ROPE CONSTRUCTIONS

**BRAID-ON-BRAID:** Also known as Twin Braid and Double Braid. Actually two braided ropes combined into one rope. A braided core is covered with a braided jacket to produce a strong, handsome, easy handling rope. This rope is spliceable and, in most instances, is stronger than twisted rope of the same material and diameter. It is available in various synthetic fibers.

**DIAMOND BRAID:** Also known as Hollow Braid and Maypole Braid. This rope is constructed of 8, 12 or 16 strands with a hollow center. An outstanding characteristic of this construction is its ability to be spliced in just seconds. It is available in various synthetic fibers.

**SOLID BRAID:** A very firm, round rope that works extremely well and blocks and pulleys. Its name refers to the special lock-stitch construction of the rope. Solid Braid rope will not unravel when cut or accidentally broken. It is available in various synthetic and cotton fibers.

**LAID:** Also known as Twisted rope. Just about all laid rope is 3-strand construction. It is spliceable and is available in virtually every type of rope fiber.

## ROPE FIBERS

**NYLON:** The strongest fiber rope manufactured. Due to its elasticity, nylon can absorb sudden shock loads that would break ropes of other fibers. It has very good resistance to abrasion and will last four to five times longer than natural fiber ropes. Nylon rope is rot proof and not damaged by oils, gasoline, grease, marine growth or most chemicals.

**GOLD BRAID®:** A gold colored Braid-On-Braid nylon rope, consisting of a braided jacket over a braided core. Combines excellent performance, spliceability and handsome appearance. Manufactured by Puritan Mills, Inc.

**POLYESTER:** Polyester is very strong, but not quite as strong as nylon rope. The difference between the two ropes is that polyester does not have the stretch and elasticity of nylon. Other than this, the characteristics of the two fibers are practically the same.

**PIMM® SHEET:** A specially constructed rope designed specifically for sailing. It is available in either polyester or cotton. Polyester Pimm Sheet is far superior to cotton due to its great strength, minimum stretch, abrasion resistance and durability. It is manufactured by Puritan Mills, Inc.

**TENSTRON®:** Combines tradition with progress. Tenstron is constructed from olefin fiber with the rich, golden tan color of manila rope. It has all the advantages of the modern synthetics, plus the rope color that many people like. It is rot proof, water proof and not damaged by oil, gasoline or most chemicals. In addition, Tenstron floats on the surface of water. Manufactured by Puritan Mills, Inc.

**POLYPROPYLENE:** A lightweight, strong rope that is extensively used in many different ways. It is a floating rope and is rot proof and unaffected by water, oil, gasoline or most chemicals. Polypropylene rope is available in monofilament fiber, which

is smooth surfaced, or multifilament fiber, which has a somewhat velvety appearance and feel.

**PRO-LINE®:** Puritan Mills, Inc. registered trade name for multifilament polypropylene rope. Available in either solid braid or laid (twisted) construction.

**POLYETHYLENE:** One of the best known synthetic fiber ropes. A floating rope somewhat like polypropylene except that it is just a little lighter. Also, polyethylene's handling characteristics are a little different than polypropylene. It is not quite as strong, size for size, as polypropylene.

**COTTON:** Much cotton rope and cord is used today. Most of it in the form of sash cord, clothesline, venetian blind cord and other uses. For handling quality, cotton is hard to beat. It is soft and pliable, and easy on the hands. Being a natural fiber, it does not have the strength or durability of synthetic fiber ropes.

**MANILA:** The best known natural fiber rope. At one time it was the best available but it is steadily losing ground to the synthetic fiber ropes. Manila must be handled and stored with care as any dampness will cause it to rot and, of course, materially damage its effectiveness.

**SISAL:** A rope that's used primarily where strength and durability are not important. Sisal is a natural fiber that deteriorates rapidly when exposed to weather.

## HOW TO MAKE YOUR ROPE LAST LONGER

**AVOID OVERLOADING...** Safe working strength for any rope is 1/5 its breaking strength. Ignoring this safety factor is dangerous. If your rope is old or worn, make allowances for safety.

**AVOID ABRASION...** Outer and inner rope fibers contribute equally to the strength of your rope. When worn, your rope is naturally weakened. Where it is necessary for a rope to rub over an object protect it with chafing gear, such as canvas wrapped and tied around the rope.

**AVOID SUDDEN STRAIN...** Rope that is strong enough under a steady strain can be broken with a sudden jerk. Care when working with rope is extremely important.

**AVOID KINKS...** When rope is repeatedly turned or twisted in one direction, it is certain that kinks will develop, unless twists are repeatedly thrown in, or out of rope. Pulling a kink through a restricted space such as a tackle block will seriously damage the rope fibers.

**AVOID SHARP ANGLES...** Sharp bends greatly affect the strength of a rope. Any sharp angle is a weak spot. Pad it for safety, and even then, Be Careful!

**AVOID WRONG REEVING...** Always use the right size rope for the sheaves in the block or pulley. Too small sheaves cause added friction and rope wear.

**REVERSE ENDS...** Prolonged use, or wear, of one

part of a rope will naturally, decrease it's effectiveness at that point. Occasionally reverse your rope, end-for-end, to distribute the wear more evenly. A good example is an anchor line aboard a boat.

**AVOID CHEMICALS . . .** Virtually all synthetic fiber ropes are immune to damage from oil, gasoline, paint and most chemicals. To be on the safe side, however, keep your rope free of any type chemical. Natural fiber ropes are, of course, severely damaged by exposure to chemicals.

**KEEP ROPE CLEAN . . .** Dirt on the surface and imbedded in rope acts as an abrasive on fibers. When rope becomes dirty wash it thoroughly with clean water. Be sure to dry natural fiber ropes before storing.

**AVOID IMPROPER STORAGE . . .** Synthetic fiber ropes require no special storing conditions other than keeping them out of sunlight and out of extremely hot rooms. The ultra-violet rays of sunlight has a weakening effect on rope that is exposed for prolonged periods of time. Natural fiber ropes must of course, be kept dry or they will rot in a very short time.

## ROPE TERMINOLOGY

**BIGHT:** A loop made in any part of a rope.

**BITTER END:** The end of a rope opposite the end in use.

**BLOCK:** Similar to a pulley. Used to give mechanical advantage when lifting or pulling heavy objects.

**END:** The end of a rope in use. (Opposite the bitter end).

**FATHOM:** A unit of measurement. 1 fathom is 6 feet.

**FALL:** The standing part of the rope coming from the fixed block on a block-and-tackle, on which strain is applied.

**LAY:** The way a twisted rope is constructed. Lay is either right-hand or left-hand.

**LINE:** Rope used aboard boats and ships is called line.

**PULLEY:** A device consisting of a sheave mounted in a block or wall, which is used to achieve mechanical advantage when lifting or pulling heavy objects.

**ROUND TURN:** Two turns of rope around the object to which it is being fastened.

**SHEAVE:** Pronounced "shiv". The grooved wheel in a block or pulley upon which the rope rides when in use.

**STANDING PART:** The main part of the rope.

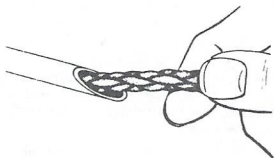
**TURN:** One turn of a rope around the object to which it is being fastened.

## SPLICING DIAMOND BRAID ROPE

### TOOLS NEEDED

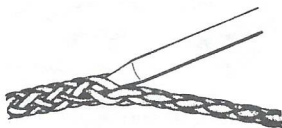
All that is needed to splice Diamond Braid rope is a hollow splicing fid of the proper size. Each diameter rope requires a fid of the same size. All fids are marked with the rope diameter for which they are designed. Fids are available from your Puritan rope

dealer.

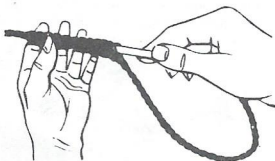


### SIMPLE EYE SPICE

1. Insert one end of rope into splicing fid.



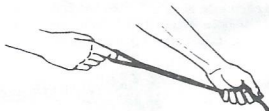
2. Select point where splice is to begin, insert tapered end of fid between the strands at this point.



3. As fid penetrates stitches, guide the fid down the hollow center of the rope. In this step, push fid with right hand . . . at the same time use left hand to work the rope over the fid.



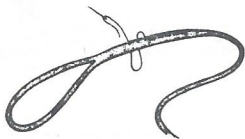
4. Six to eight inches below starting point, bring the fid out between two strands.



5. Remove fid from rope.

Tighten splice by pulling as indicated. (Caution: Completed splice section should measure at least six inches in length.)

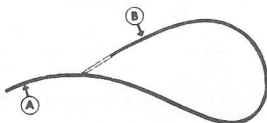
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6. For maximum security the splice should be stitched using a needle and heavy nylon, polyethylene or polypropylene twine. If a needle is not available the fid may be used to lead the twine back and forth through the splice.

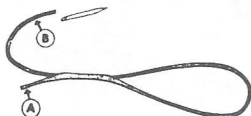


3. Tighten splice. Clip protruding end.

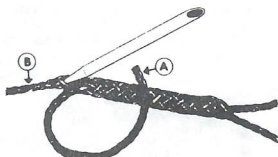


### PERMANENT EYE SPLICE 1

1. Cut approximately 2 ft. from one end of rope to be spliced. Put end B into splicing fid and insert it about 8 inches from one end of rope. Push fid 4 inches through center of rope and bring it out, leaving end approximately 4 inches long. NOTE DIRECTION OF SPLICE IN DIAGRAM!



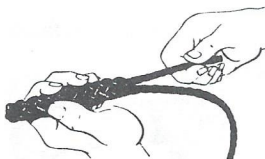
2. Remove fid. Pull end B until eye is correct size.



3. Splice A into B as described in End-To-End splice. Clip end A if it protrudes from rope.

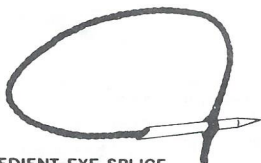


4. Splice end B into original rope with an End-To-End splice.



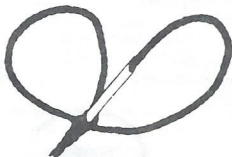
### CROWN SPLICE

Make small eye splice as explained in Simple Eye Splice, Steps 1-5. Pull end protruding from splice until loop slides down flush with end of rope. Trim off protruding end.



### EXPEDIENT EYE SPLICE

1. Run end of rope through point where splice is to start.



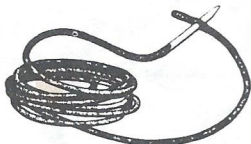
2. Start splice two stitches above penetrating rope. Run fid through penetrating rope and continue down the hollow center for approximately six inches. Bring fid out through stitches. Remove from rope.

Use WPM'S Easy Splice

MULTI PURPOSE ROPES

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## PERMANENT EYE SPLICE 2

1. Place splicing fid on end of rope, opposite to end where Eye splice is wanted. Insert fid through rope, about 6 inches from end, as shown.



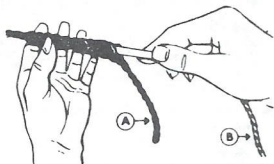
2. Remove fid and pull entire length of rope through ... to size of Eye splice desired.



3. Just below the point where rope comes through, (Arrow) insert fid into rope in direction away from loop, as illustrated. Insert short rope end into fid and guide fid down the hollow center of the rope. Push fid forward with right hand ... at the same time use left hand to work rope over fid.

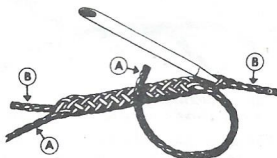


4. Five inches below starting point bring the fid out between two strands. Remove fid and pull protruding end to tighten the splice, then trim protruding end.

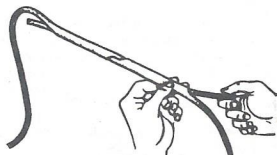


## END-TO-END SPLICE

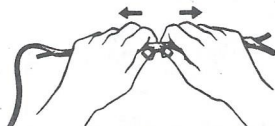
1. Splice rope B into rope A using principles described in EYE SPLICE, Steps 1-5.



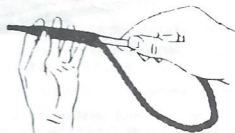
2. At point where A overlaps B insert fid into rope B. Splice A into B.



3. Adjust splice so that A abuts B.

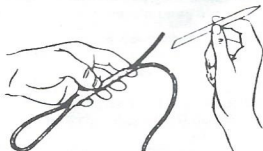


4. To tighten grasp splice firmly at center with thumb and fore finger of each hand ... slide hands along rope as indicated by arrows. Clip any protruding ends.



## ADJUSTABLE EYE SPLICE

1. Insert rope into hollow end of splicing fid, then insert fid into rope at point about 24 inches from it's end. As fid penetrates strands, guide it down the hollow center of the rope. In this step, push fid forward with right hand ... at the same time use left hand to work the rope over the fid.



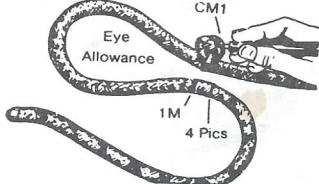
2. Bring the fid and rope out between two strands, six to eight inches below starting point. Remove fid from rope.

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3. Cap the protruding end with a Crown splice to prevent it from slipping back through the splice.

Eye size can be changed by adjusting the length of rope protruding from the splice.



## SPLICING BRAID-ON-BRAID ROPE

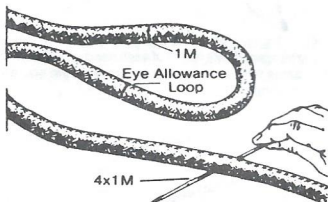
### TOOLS NEEDED

**A FID**... (B-Series) of the proper size. Braid-On-Braid splicing fids are identified with a "B" series number in addition to the rope diameter, size E. G. 3/8" (B-12)... 1/2" (B-16)... etc. Proper size fids for each rope diameter are available from your Puritan rope dealer.

**A PUSHER**... Used for pushing rope and fid into rope when making a splice.

**TAPE**... Any type of tape is satisfactory as it is only used temporarily to prevent unraveling while making a splice.

**A MARKING DEVICE**... Pencil, Dry Marker, Chalk or anything that will mark the rope being used.



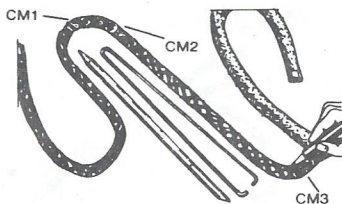
1. Layout line, without twist or kinks, on a flat work area. Tape the end to be spliced. Make the Initial Measurement (1M) by measuring one fid length from the rope end. Mark around the entire circumference of the jacket.

Form a loop the size of the desired eye and mark that distance from the Initial Measurement mark toward the standing part of the line. Make an Eye Allowance mark around the entire circumference of the jacket.

Measure a distance approximately 4 times the Initial Measurement (4 fid lengths) from the Eye Allowance mark. Insert a pin through the jacket and core at this point. In small diameter lines an overhand knot may be tied instead of using a pin, if desired.

2. For the 1M mark, count 4 pics (pairs of strands) toward the bitter end and make a mark around entire circumference. From this mark, count and mark every 5th pic until you reach the end. Go back and mark pics crossing these marked stands.

Separate jacket stands at Eye Allowance mark and put a mark on the core. This is Core Mark 1 (CM 1).

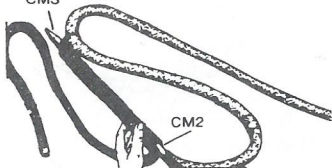


3. Extract core from jacket after marking. When clear of jacket, tape core end. Expose more core by grasping it with one hand and pushing the jacket back toward the pin with your other hand.

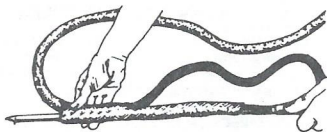
From CM 1, measure toward the standing part of the line one short fid section and mark core (CM 2). From this mark measure one short section plus one full fid length and mark core (CM 3).



4. Taper the jacket by extracting the strands marked in Step 2, starting near the bitter end. Cut off stands at the marks and discard.



5. Insert jacket into core. First, fold over end of jacket and insert into hollow end of tubular fid. Being careful not to twist the jacket, insert fid into core at CM 2. Using a pusher, push fid through core and out at CM 3 until jacket exists.



6. Pull through until first mark on jacket meets core mark 2. Remove tape from jacket. Using the fid, insert taped end of core into jacket at this first mark and out of the jacket at a point 1/3 of the fid length beyond the point of extraction.

Pull core through jacket until marks on core and jacket meet at crossover. Remove all slack from the core with your right hand while holding jacket near crossover with your left. This will cause the jacket yarns to retreat back into the core center.



7. Holding crossover firmly with your right hand, milk slack out of jacket toward vertex until core retreats into jacket as far as possible.

Remove all slack from the jacket beginning at the point of the eye where it emerges from the cover (eye allowance mark) and past the point where the core comes out of the cover. Make a mark on the core where it comes out of the cover.



8. Grasp the core and pull it out of the jacket 1/6 of the fid length. At this point cut the core at a 45 degree angle ending at the mark made where the core emerged from the cover.

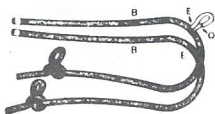


9. Tie off the line near the point where the pin is inserted to a stationary object.

Reset the exposed angled core back inside the jacket by placing a light strain on the rope (pulling the eye against the tie off point) and removing all slack.

Pull out the pin at the tie off point, starting as close to the tie off as possible and remove all slack from the jacket. Upon completion of the eye splice lock — stitch or whip the splice.

## SPLICING BRAID-ON-BRAID ROPE



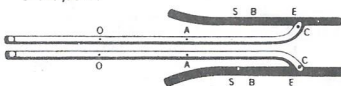
### END-TO-END SPLICE

1. Place ropes to be spliced side by side and mark point "B" (Base point) one fid length from the end of each rope. Mark point "E" about 2/3 a fid length from point "B". Make certain that both ropes are marked identically.

Tie a slip knot about 5 feet from point "E" in each rope.

Using the pusher, part the jacket stands at point "E" and extract the core. Tape the ends of both jackets and extracted cores.

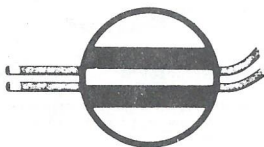
Mark point "O" on each core where it comes out of the jacket.



2. Mark both cores as follows:

Hold core at point "O" and slide jacket back about 2/3 a fid length. Mark point "A".

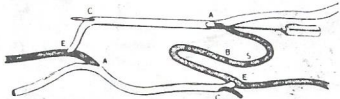
Hold core at point "A" and slide jacket back about 1-2/3 fid lengths. Mark point "C".



3. It is necessary to taper the jacket to prevent bulge in the crossover. Do this to both ropes as follows:

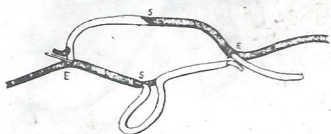
Starting at point "B" count 7 adjacent pairs of strands and mark point "S". From this point count, and mark, every other intersecting pair of strands (see illustration). 7 intersecting pairs are to be marked.

Remove the tape from the jacket end and, beginning with the marked intersecting strands nearest the jacket end, cut the marked strands only and pull them from the jacket. **DO NOT CUT BEYOND POINT "S"**. Tape end of tapered jacket



4. Place the ropes end to end with the jacket of each beside the extracted core of the other.

Insert the end of one jacket into the fid socket. Insert the fid at point "A" on the other rope core. With the pusher, push the fid through the center of the core and bring it out at point "C". Pull the jacket through the core til point "S" on the jacket meets point "A" on the core. Repeat this procedure with the other jacket and core.



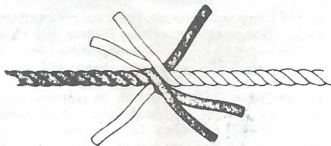
5. Insert taped end of one core into fid socket. Insert fid at point "S" on the other rope jacket. With the pusher, push fid through the center of the jacket and bring it out at point "E". Repeat this procedure with the other core and jacket.



6. Remove tape from jacket ends and pull crossover snug by pulling jacket and core simultaneously on each side of splice. Hold the crossover firmly and smooth excess braid away from it in both directions. Cut off protruding cores at point "E"



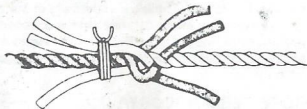
7. Hold rope at the slip knot with one hand and, with your other hand, slide the jacket toward the splice. Repeat with other rope. Do this until all slack has been removed between the slip knots and the length of the opening in the splice is about equal to the rope's diameter



## SHORT SPLICE

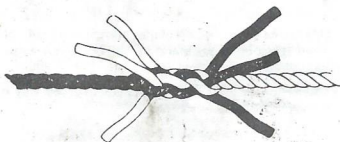
1. For end-to-end splicing of two ropes. First, unlay both ropes for a short distance and bring them together so that the main bodies of the ropes fit snugly and the unlaid strands mesh, alternating a strand of one with a strand of the other. Sealing the strand-ends of synthetic fiber ropes with a flame or hot knife will prevent their unravelling.

It is helpful to temporarily tie the strands of one rope to the body of the other rope.



2. Now, tuck one of the unlaid strands over and under a strand of the opposite rope, working against the twist.

Take the unlaid strand, next to the strand just tucked, and tuck it over and under the next strand in the opposite rope. Do the same thing with the remaining unlaid strand. Now, take one more tuck with each strand.



3. Remove the temporary tie and make two tucks with the other three strands. You now have the strands of each rope tucked two times through the strands of the other rope. Now go back and make at least two more tucks with each of the six strands... four additional tucks are recommended for synthetic ropes



4. Roll the splice under your foot, or a board and clip off ends of protruding strands.  
**CAUTION:** Do not clip ends too close to splice.

# TRY WPM'S NEW UNMANILA

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